Automatic VLAN creation based on on-line measurement

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↑ ABSTRACT

Virtual LANs (VLANs) permit hosts connected to a LAN switch to be grouped together into logical groups as a function of some management policy rather than simply of their physical location. Commercial LAN switches support a variety of policies based on either physical or logical addresses, protocol types, tagged frames, or user defined rules. The objective of these policies is the same: to reduce the amount of traffic that needs to be routed by grouping together hosts which are likely to communicate with each other into the same virtual LAN. This paper proposes a novel and more direct approach, it shows how VLANs can be created and removed dynamically as a function of the *measured* traffic patterns across the network. This is both simpler than configuring many static rules and permits the VLAN configuration to adapt to the evolution in the traffic patterns. The latter point is especially important in future LANs supporting peer-to-peer continuous media services, such as IP telephony or video-conferencing, in which clusters of hosts come together to communicate with each other intensively for relatively short periods of time and then form into new clusters.

↑ REFERENCES

Note: OCR errors may be found in this Reference List extracted from the full text article. ACM has opted to expose the complete List rather than only correct and linked references.

1 IBM, "IBM 8277 Ethernet Switch," IBM release notes, 1999.

2 J. Martillo, "Routing in a Bridged Network," Telford Tool inc. white paper, 1990.